Questions & Answers

Arsenic in Drinking Water

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What is arsenic and where does it come from?

Arsenic is a naturally occurring element in the earth's crust. Arsenic is released into the environment through natural processes such as volcanic action or erosion, but it can also come from human activities such as mining or smelting arsenic-containing ores. It is also known to be in some commercial wood preservatives and agricultural chemicals.

How does arsenic get into drinking water?

Most arsenic in drinking water comes from natural rock formations. As water flows through these rock formations it can dissolve arsenic and carry it into underground aquifers, streams or rivers that may be used as drinking water supplies.

Arsenic deposited on the ground from industrial or agricultural uses tends to remain in the top few feet of soil for a long time and is not likely to have a significant impact on most aquifers. When dissolved in water, arsenic has no smell, taste, or color, even at high concentrations.

Does arsenic affect human health?

Yes. Low levels of arsenic in drinking water, soil, air and food pose a slight health risk. However, as with most contaminants, the more you are exposed over time, the greater the risk of experiencing health effects. Since different people respond differently to the same level of arsenic, there is no way to know exactly what may happen in any given case. Arsenic health effects include diseases that can impact the cardiovascular system, kidneys, skin, nervous system, or lead to various forms of cancer.

However, getting arsenic on the skin when bathing or washing is not considered a major health risk.

What is the maximum contaminant level for arsenic in drinking water?

For many years, the drinking water standard for arsenic was 50 parts per billion (ppb). The standard was lowered to 10 ppb in 2002. The new standard went into effect for public water systems in January 2006.

Why was the drinking water standard for arsenic lowered?

To reduce the risk of adverse health effects by reducing people's long-term exposure to arsenic in drinking water.

Do some parts of Washington have more arsenic than others?

Yes. Elevated levels of naturally occurring arsenic are in some central and northern Puget Sound counties. Scientists attribute these arsenic levels to the geology of these locations rather than human activities.

How does the new standard affect public water systems?

The new standard of 10 ppb balances the current understanding of arsenic's health effects against the costs of removing arsenic from drinking water. Reducing the amount of arsenic allowed in drinking water will lessen people's exposure and reduce the risk of adverse health effects. Increased safety comes at a cost. Nationally, meeting the new arsenic standard is projected as the largest portion of the total cost associated with all new compliance requirements coming from the 1996 amendments to the federal Safe Drinking Water Act.

How can I tell how much arsenic is in my drinking water?

If you are on a public water system, you will receive a Consumer Confidence Report from your water utility each year with information on the level of arsenic (if any) detected in your drinking water. If you have your own private source, you may have a state-certified lab perform an arsenic analysis on your water. Contact your local health department or the numbers below for information on labs available for arsenic testing.

Are there ways I can remove arsenic from my drinking water?

Yes. There are several treatment methods that will effectively remove arsenic from drinking water. Public water systems use the services of consulting engineers to determine the best treatment method to use.

For private homeowners not on public water systems, the treatment method selected should be listed by a recognized third-party testing organization. These third-party organizations list only treatment methods that meet strict testing protocols established by the American National Standards Institute (ANSI) and NSF International.

- NSF standard 61 is applicable to treatment methods for source water (wells).
- NSF standards 53 or 58 apply to treatment devices used within a household.

For organizations that use NSF or ANSI testing protocols and provide lists of certified treatment units, visit the Web site at http://www.doh.wa.gov/ehp/dw/our_main_pages/dwlinks.htm

For more information:

Call the Washington State Department of Health Office of Drinking Water at (800) 521-0323 or the:

- Southwest Regional Office (360) 236-3030
- Northwest Regional Office (253) 395-6750
- Eastern Regional Office (509) 456-3115

Visit the following Web sites:

Department of Health Office of Drinking Water http://www.doh.wa.gov/ehp/dw

U.S. Environmental Protection Agency http://www.epa.gov/OGWDW/arsenic.html

Agency for Toxic Substances and Disease Registry http://www.atsdr.cdc.gov/tfacts2.html